

University Funding Formula Matrix Design Tool

**University Funding Formula Matrix Study Committee
June 2001**

Background

A key component of the university funding formula is a weight matrix that assigns different weights to courses in different disciplines and at different levels. The values in the weight matrix have always been somewhat controversial, and there have been numerous attempts to justify them. Because any changes to the matrix would result in a reallocation of funds to some institutions at the expense of others, the Formula Advisory Committees have taken the position that no changes should be made until a comprehensive cost study determines the costs of instruction in all disciplines and at all levels.

The Formula Advisory Committee appointed in September 1999 attempted to do this, but it was not successful. In February 2000, the committee recommended to the Commissioner that a committee should be appointed to conduct a cost study that would recommend changes to the weight matrix to be considered by the next Formula Advisory Committee in September 2001.

The advisory committee appointed to do the cost study made a fundamental decision to determine the matrix formula weights using a two-step process. Step one was to determine the faculty salary costs per student credit hour using data reported to the Coordinating Board on faculty activities and enrollments. Step two was to allocate other costs to student credit hours based on the judgment of members of the committee and other available data.

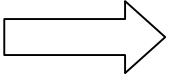
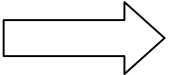
The Formula Matrix Design Tool (FMDT) was created to facilitate the work of the committee. Essentially, it allows committee members to easily and rapidly do a number of “what ifs” related to how funds should be allocated. In addition, it provides a methodology that can be used to revise the formula matrix in future years and to revise the formula matrix to incorporate more, fewer, or different disciplines.

It is available on the Coordinating Board’s web site at

<http://www.theccb.state.tx.us/reports/xls/0402.xls>

Overview of the Design Tool

The FMDT is a series of 17 inter-related EXCEL worksheets. Changes on one worksheet ripple through the others. The chart below describes the inputs to the tool and outputs from the tool.

<p>Inputs</p> <ul style="list-style-type: none"> • Expenditures for instruction, student services, academic support, institutional support, and public service (from Annual Financial Report) • Cost per SCH (from CBM004, CBM008, and CB cost allocation model) • FY2000 enrollments by discipline (from data reported to CB) • Instruction and Operations Formula Appropriations for Instruction, Academic Support, Institutional Support, Student Services, Public Service (Calculated) • Departmental Operating Expense as a percentage of Instruction expenditures (User Input) • Cost per SCH (Optional manual change) (User Input) • Relative weights by Full-Time Student Equivalent expenditures for Academic Support, Institutional Support, Student Services, Public Service by level, and Departmental Operating Expense by level and by discipline (User Inputs) 	<div data-bbox="706 405 873 478"></div> <p>Formula</p> <p>Matrix</p> <p>Design</p> <p>Tool</p> <div data-bbox="706 1150 873 1224"></div>	<p>Outputs</p> <ul style="list-style-type: none"> • Estimated cost per SCH for faculty salary, department operating expense, student services, academic support, institutional support, and public service, plus total cost per SCH • Formula matrix and “multiplier” • Total impact of the proposed formula on each general academic institution, showing the amount generated by the current formula, the amount generated by the proposed formula, and the difference • Impact of the proposed formula on each general academic institution at each level • Impact of the proposed formula on each discipline
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The tool is designed to allow users to easily and rapidly examine the results of a number of different assumptions and their implications for institutions.

Details of the Design Tool

This section describes in more detail the contents of each of the 17 EXCEL worksheets included in the design tool.

Table of Contents Worksheet

This worksheet provides a table of contents for the remainder of the worksheets. In addition, it provides a button for each worksheet to print and to view. In addition, this worksheet indicates whether or not user input is required for each worksheet.

Worksheet Tab 1

This worksheet consists of two tables. Both contain enrollment data for Fiscal Year 2000. The first table contains full-time student equivalent data in each discipline, computed by dividing undergraduate student credit hours by 30, masters and special professional hours by 24, and doctoral hours by 18. This table is derived from the second table. The second table contains student credit hours. Users can change the data in the second table if they wish. Numbers that can be changed by users are indicated by a pink background.

Worksheet Tab 2

This worksheet contains expenditure data summarized from the Fiscal Year 2000 annual financial reports. Annual financial reports indicate expenditures for instruction but not for faculty salaries. Instruction expenditures are made up of faculty salaries and for departmental operating expense. A field in which the user can indicate the percentage of instruction that is assumed to be dedicated to departmental operating expense is provided.

Worksheet Tab 3

This worksheet consists of three tables. The first provides costs per SCH for each discipline and each level, as derived from the Coordinating Board faculty salary cost allocation model. The second table allows users to “plug” their own numbers to replace data from the faculty salary cost allocation model. Because the faculty salary data reported to the Coordinating Board does not include fringe benefits and some other costs, it is necessary to adjust these data so that they will match the faculty salaries expenditures shown on Worksheet 2. That is done, and the total costs per SCH by level and discipline is shown on the third worksheet.

Worksheet Tab 4

On this worksheet, users can indicate the relative costs per FTSE by level for academic support, institutional support, student services, and public service. For example, if the weights for student services are LD=2, UD=1, M=1, D=1, SP=1, the costs per FTSE would be twice as much for providing student services to lower-division students as for students at any other level. For Departmental Operating Expense, users can differentiate by both level and discipline.

Worksheet Tab 5

Worksheet 5 contains two tables. Using the weights provided in Worksheet 4 and the expenditures provided in Worksheet 2, costs per SCH are determined.

Worksheet Tab 6

Worksheet 6 contains two tables. The first table simply sums the cost per SCH for each of the elements of cost, yielding a total cost per SCH. This total cost per SCH balances to the total expenditures reported in Worksheet 2, which includes some non-formula funds. Since the funding formula is one of several funding sources, the total expenditures per SCH must be scaled to the amount of Instruction and Operations appropriations, as shown in Worksheet 2.

This is accomplished by multiplying each element of the first table by the percentage labeled “I&O Formula as a Percentage of Expenditures” in Worksheet 2.

Worksheet Tab 7

This worksheet contains the new formula matrix. It is derived from Worksheet 6 by dividing each element of the second table by the rate for lower-division liberal arts. The rate for lower-division liberal arts becomes the “multiplier.”

Worksheet Tab 8

This worksheet contains the current funding formula.

Worksheet Tab 9

This worksheet provides a comparison of the formula funding that would be provided by the model produced by the user’s selections with the current funding formula.

Worksheets Tab 10, 11, 12, 13, 14

Each of these worksheets shows of comparison of the formula funding that would be provided by the model produced by the user’s selections for instruction at one level with that provided by the current funding formula.

Worksheet Tab 15

This worksheet shows the impact of the model produced by the user’s selections on funding for each discipline.

Worksheet 16

This worksheet contains certified enrollments for Fiscal Year 2000, with “onliners” eliminated as required for Faculty Salary Allocation Model J.

Worksheet Tab 17

This worksheet contains the definitions of range names used in the previous worksheets.

Acknowledgments

The design of the Formula Matrix Design Tool incorporates a numerous decisions made in the course of numerous meetings of the Working Committee. The encouragement, optimism, and leadership of Governor William P. Hobby in this effort cannot be overstated. Programming for the tool was done by Frank DuBose and Dale Cherry of the Coordinating Board's Finance staff.

Appendix

This appendix lists each of the worksheets contained in the Formula Matrix Design Tool.

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